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# Washington University Record, September 17, 1981

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# Washington University Record

September 17, 1981

## Hybridomas: aiming Ehrlich's 'magic bullet'

*On Sept. 1, WU and Mallinckrodt, Inc., announced a joint research project totaling over \$3.8 million to study the production of monoclonal antibodies from the artificially created cells called hybridomas, and to pursue the possible marketable applications of this technology in the fields of medical diagnosis and treatment. How hybridomas work and the breadth of their possible impact on a wide variety of diseases are the subjects of the following story.*

The hybridoma cell — an artificial fusion between a "parent" cell that produces antibodies (tiny proteins that act as a line of defense and attack foreign substances entering the body) and a tumor cell — is one of the simplest and most startling innovations in the genetic field. Like a microscopic version of the centaur (that mythical creature who was part man and part horse), a hybridoma cell features the best of two things — the normal parent cell's ability to manufacture antibodies and the malignant tumor cell's capacity for reproducing virtually forever.

The result is an "immortal" line of antibody-producing cells.

By means of a basic technique pioneered by Cesar Milstein and Georges Kohler of Britain's Medical Research Council in 1975, scientists can now clone "purebred" lines of hybridoma cells that produce extremely specialized antibodies called monoclonals. Monoclonal antibodies act in the body like germ-sized commandos to perform exquisitely precise functions.

An organism produces antibodies only when foreign matter, such as a virus or a bacteria, stimulates the body to do so. Immunologists call alien molecules that trigger this immune reaction antigens. Certain types of antibodies match precisely with certain kinds of antigens. When an antibody locates its corresponding antigen, it attacks by binding to the foreign cell's surface in an arrangement that visually resembles a ball-and-socket joint.

What researchers can do with hybridomas that could not be done before is grow pure lines of cells that produce individual antibodies with specific abilities. One of the intriguing possibilities of hybridoma research is the realization of pioneer immunologist Paul Ehrlich's (1854-1915) prophecy of a "magic bullet" to diagnose and treat cancer.

"When one has anti-tumor antibodies which can be tagged with radioactive molecules," explained Joseph M. Davie, head of the WU department of microbiology and immunology, "they will go to the tumor cells and bind to

*continued on p. 2*



Vocal works by WU composers John MacIvor Perkins (left) and Harold Blumenfeld will be premiered Sept. 27 in Edison Theatre. A symphony for small orchestra by Robert Wykes is also on the program.

## Slatkin to direct premiere of WU composers' works

Major new works by three WU composers will be premiered Sept. 27 in Edison Theatre.

Robert Wykes, Harold Blumenfeld and John MacIvor Perkins will be represented in this "Composers' Concert: New Music in Premiere" at the Sunday evening concert, beginning at 8 p.m. Leonard Slatkin, music director of the St. Louis Symphony Orchestra, will conduct an ensemble of 20 principal players from the Symphony and guest singers.

Tickets are \$5 general admission and \$3 for students and are available at the Edison Theatre box office.

Two of the works are theatre-oriented and call for vocalists. "Andrea del Sarto," by Perkins, associate professor of music, is an operatic monologue adapted from Browning's poem. The life, work and faithless wife of del Sarto, the celebrated painter, are subjected to a penetrating examination in this recently-completed operatic psychodrama. Edmund LeRoy, baritone and WU assistant professor of music, will sing the part of del Sarto, assisted by the WU Madrigal

Singers, directed by Orland Johnson, professor of music.

"La Vie Anterieure," by Blumenfeld, professor of music, is a spatial cantata after Baudelaire's poems — sensuous, menacing and serene in turn. New York baritone Jay Willoughby, accompanied by guitar, strings and percussion, will perform onstage, with an enhancement of balcony music involving soprano Carolee Coombs-Stacy, tenor Robert Barefield and additional percussion.

"Pairs: A Second Symphony," by Wykes, professor of music, features a theatre-sized orchestra of 13 players. Composed expressly for the forthcoming concert, "Pairs" is a virtuoso work performed on standard instruments, paired with unusual but related instruments.

Perkins, chairman of the WU Department of Music from 1970 to 1976, is the author of five articles and the composer of 25 works. Among his more recent works are "Five Miniatures for String Quartet and Electronic Tape,"

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## \$90,000 sought in United Way fund drive here

There are at least 800,000 good reasons to give to the United Way.

That's how many people in metropolitan St. Louis used the services of a United Way-supported agency last year. More than one-third of St. Louis residents found support from agencies providing programs ranging from disaster relief to family counseling, youth programs to rehabilitation of the handicapped.

The United Way of Greater St. Louis will initiate its drive on Sept. 18 with a goal of raising \$24 million. WU's campaign will begin Thursday, Sept. 24, and its goal is \$90,000, according to Thomas A. Harig, director of general services and chairman of the WU United Way drive.

Ninety-two percent of funds raised by the campaign is used by the 111 agencies and 250 service centers supported by the United Way. WU's Child Guidance Center, the Central Institute for the Deaf and the Campus Y all receive United Way funds.

Harig noted that WU fell \$4,000 short of its goal of \$86,000 last year, because participation among full-time employees was only 23 percent. Of the 934 pledges made, the average gift was \$88.22, bringing the total to \$82,393.

"If every employee gives \$20 this year we will easily reach our goal," Harig said. "That's \$20 to feed someone whose house has been destroyed by a tornado or flood, or to teach handicapped children to live with their disability. The pledges last year were extremely generous, but participation was still too low."

On Sept. 24, volunteer United Way representatives from every WU department will meet for a kick-off breakfast in Wohl Center. Chancellor William H. Danforth, this year's general chairman of the United Way for Greater St. Louis, will also attend.

Pledge envelopes will be distributed among faculty and staff members after Sept. 24. The departmental representatives will answer questions about the campaign and follow up on outstanding pledge cards.

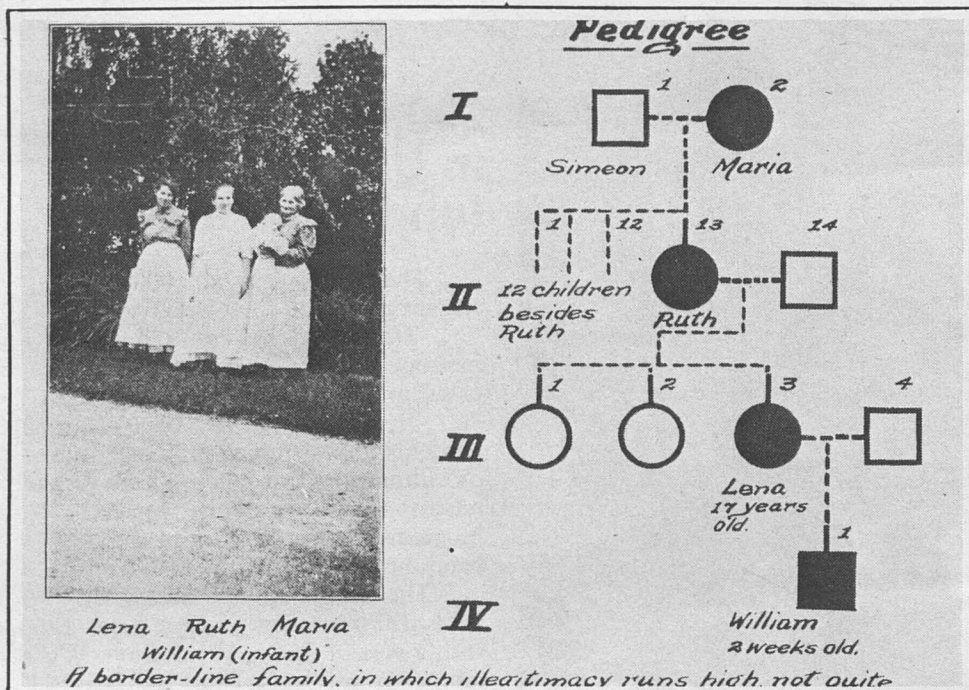
Pledges also may be deducted regularly from paychecks or mailed to the Office of General Services, Box 1069. All pledge information is confidential.

"In today's fast-paced society, time does not allow us personally to touch more than a few people in our day-to-day living," Harig said. "A gift to United Way allows us to touch hundreds of people who need our help."





The Department of Romance Languages has established a memorial fund in honor of the late Richard L. Admussen. A professor of French, Admussen died last April of leukemia. The fund will be used to establish a prize for honor students of French. Contributions payable to WU may be sent to John L. Grigsby, chairman, Department of Romance Languages, Box 1077.



Four generations of a family living in a Yaphank, N.Y., almshouse were traced in a pedigree study conducted in 1917. The family was described as "border-line . . . in which illegitimacy runs high, not quite able to care for itself in organized society."

## Historian finds eugenics movement long on racism, short on science

Some men are made of iron, some of silver and some of gold. This notion existed as far back as Plato, who called it a great lie. But it was not until the early 1900s that the science of genetics was used to rationalize the active elimination of "defective" family lines as a cure for social problems.

"The biology of eugenics — or breeding better humans — was not really valid, even in its own day," contends Garland E. Allen, WU professor of biology and historian of science. "The traits that were said to be genetically controlled — bad temper, laziness, alcoholism, sea-faringness, feeble-mindedness — are so vague and so subject to environmental causes that no one could ever provide evidence that they were hereditary."

According to Allen, the eugenics movement was a reform movement — one of a number of responses to vast economic and social changes taking place in the United States before and after World War I. He is studying those changes this fall while on sabbatical at Harvard's Charles Warren Center for Studies in American History.

"I'm interested in the larger question of how and why such a movement got started," said Allen, who noted that eugenicists were largely responsible for the passage of compulsory sterilization laws in 35 states, as well as the 1924 Johnson Act, an immigration restriction law that favored northern Europeans. "The whole movement was very racist, very anti-ethnic," Allen said.

Pedigree studies were common. Groups like the 1937 Sterilization League of New Jersey traced ancestral lines, pointing out the supposed social benefit had women like Ada Juke, for instance, born in 1740, been sterilized. Her descendants, they claimed, included paupers, illegitimates, perverts, the mentally diseased, criminals and murderers. The crippled, the epileptic and the blind also were noted as

undesirable. Such eugenics groups claimed a total of 21,800 people were sterilized between 1907 and 1935, but Allen doubts that accurate records were kept.

He cited three explanations for the popularity of the eugenics movement: It justified those already rich and powerful (the Carnegie and Kellogg foundations and the Rockefeller and Harriman families all funded major eugenics projects); it helped combat the growing militancy of labor and union organizing (much of which was led by southern and central European immigrants); and finally, through immigration control, it helped limit the pool of unemployed.

The movement died down during World War II when public sentiment soared against Nazi Germany's master race theory. But Allen sees a resurgence of the same sort of hereditary attitude in the current work of Arthur Jensen, a Berkeley, Calif. psychologist, and William Shockley, a Stanford physicist and Nobel Prize winner, who suggest that blacks are genetically inferior to whites in intelligence.

In many aspects, population control and sociobiology (the study of the genetics and evolution of social behavior) are also successors to the old eugenics movement, Allen believes. Proponents of these theories maintain that social inequalities (as between blacks and whites, or men and women) are due to innate inequalities between people, he says.

The eugenics movement illustrates a persistent problem in the history of science — what ends does science serve? "You can't always predict the results of research," Allen pointed out. As science affects people's lives more and more, he said, it becomes increasingly important to understand how it interacts with economic, social, political and religious factors.

"I'm trying to dispel the myth that science is a separate and pure activity."

## Hybridomas —

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their surfaces. Then by X-ray analysis of the whole body one can actually locate and determine the extent of tumor mobilization."

An even more enticing application, and one that fits more closely into the classical meaning of Ehrlich's magic bullet, is arming the monoclonal antibodies with a toxin. The antibody will consequently roam through the menagerie of germs inhabiting the body and track the alien that it recognizes chemically as its antigen. The genius of this selective targeting is that the toxin will kill only malignant cells — not both cancerous and normal cells, as in the shotgun approach that radiation and chemotherapy treatments use.

Largely through the leadership of Davie, and with the support of National Institutes of Health (NIH) funds, WU researchers have been using hybridomas as an important part of their work for about three years.

For example, Gustav Schonfeld, director of the Lipid Research Center, is using hybridomas to develop a whole new approach to identifying and characterizing molecules that are known to be important ingredients in causing hardening of the arteries.

Two investigators, Laurence A. Sherman and George D. Wilner of the department of pathology, are looking for hybridoma antibodies that they can use to study and diagnose thrombosis.

Still another ongoing project uses hybridomas to diagnose infectious diseases. Patrick R. Murray, department of pathology, George S. Kobayashi, department of internal medicine, and Donald J. Krogstad, department of pathology, are attempting to use monoclonal antibodies to study malaria and certain fungal and gastrointestinal infections.

Over the last three years, investigators in pathology, microbiology, genetics, medicine and other disciplines have published the results of hybridoma technology in their areas. After each publication, companies made inquiries about possible commercial and health-related uses for hybridomas. More than a dozen companies contacted the School of Medicine in two years.

"This got us thinking about how important this type of research could be for the University, for industry and for society," Davie said.

Davie subsequently contacted Jay McDonald, associate professor of pathology and director, diagnostic laboratory, Barnes Hospital, and the two doctors organized a plan to present to industry.

But there are also long-term humanistic results. The WU-Mallinckrodt agreement reflects Davie's belief that "one of the missions of research of any sort is to apply the results to human health."

"The NIH, which is the major mechanism for research in this country, actively encourages the commercialization of results simply as a device by which research can be applied to purposes that improve the human condition."

## Wells named Bixby professor

Samuel A. Wells has been appointed Bixby Professor and head of the WU School of Medicine's Department of Surgery, effective Oct. 1. Wells will also become surgeon-in-chief at Barnes and St. Louis Children's hospitals.

The Bixby Professorship, named after St. Louis businessman and philanthropist William Keeney Bixby, was established in 1910.

Wells, currently professor of surgery at Duke University Medical Center, has conducted research on the transplantation of endocrine tissues and on tumor markers, substances secreted by the tumors and useful in locating them.

Wells graduated from Emory University Medical School in 1961. He served his internship and residency in internal medicine at Johns Hopkins Hospital. Subsequently, he was a surgical resident at Barnes Hospital and later a clinical associate in the surgery branch at the National Cancer Institutes, National Institutes of Health.

In 1966, Wells joined Duke University Medical Center as a general surgery resident. While at Duke, Wells was director of its Clinical Research Unit and chairman of the treatment committee for the Breast Cancer Force, National Cancer Institutes.

## Bieber honored with lecture series

The Historical Association of Greater St. Louis will sponsor a memorial lecture series honoring the late Ralph P. Bieber, WU professor emeritus of history, who died July 23.

The first lecture will be held Sunday, Sept. 20 at 2 p.m., in Steinberg Hall Auditorium. Featured speakers and their topics are: Herbert Mayer, professor of history, Seminex, "Ralph Bieber, the Historian;" James Neal Primm, professor of history, University of Missouri, St. Louis (UMSL), "A Tribute to Ralph Bieber, the Historian;" and Raymond Breun, director of education, Jefferson National Expansion Memorial, "Legends of Western Expansion: Some Not True."

Future lectures in the series will be held on Nov. 15, Mullaphy Community School, 4221 Shaw Ave., 2 p.m.; March 21, 1982, Missouri Historical Society, Jefferson Memorial, Forest Park, 2 p.m.; and May 9, 1982, Busch Memorial Center, St. Louis University, Grand and Laclede Avenues, 6 p.m. (dinner meeting).

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## Composers — continued from p. 1

"Cadenza" for piano, and "After a Silence-alpha" for chamber orchestra. The latter two works were premiered, along with other pieces by Blumenfeld and Wykes, at a very favorably received concert at WU in 1980.



Leonard Slatkin

Two of Perkins' pieces, "Caprice," for piano, and "Music for 13 Players" are available on commercial disc. Among the prizes he has won for his work are the Frederick Sheldon Prize Fellowship (Harvard University), a Woodrow Wilson National Fellowship, the Wister Prize, and the Wexler Prize.

Blumenfeld's most recent works have focused upon settings of texts of Baudelaire, Verlaine, Rilke, Mandelstam, Crane and Blake for voice and accompaniment. The latest of this cycle, the cantata "La Vois Reconnue," was premiered in St. Louis in 1980, heard again last spring in Cincinnati under the direction of Gerhard Samuel, and is scheduled for Los Angeles next season.

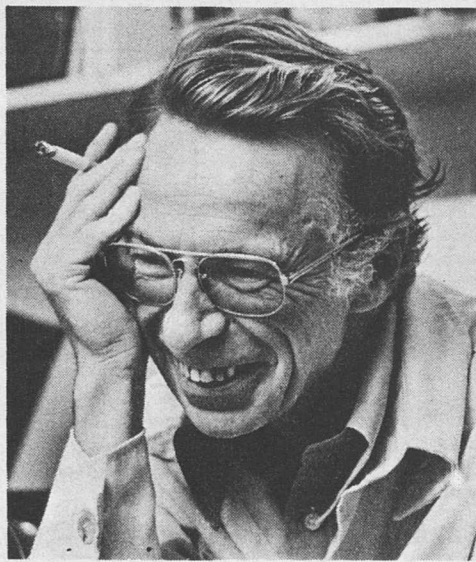
Blumenfeld received an award for his composing from the American Academy-National Institute of Arts and Letters in 1977. Two of his recent works, "Rilke for Voice and Guitar" and the

Crane cantata, "Voyages," have been recorded.

"La Vie Anterieure" was composed in 1976 at Yaddo. It joins into a cycle three celebrated poems of Baudelaire: the sensuous "Le jet d'eau;" the menacing death-piece, "l'Horloge;" and the serene title poem, in which life is remembered from beyond the grave.

Wykes' most recent concert music, "A Lyric Symphony," was premiered by Leonard Slatkin and the St. Louis Symphony in May 1980. In the Kennedy Center-Friedheim competition it was judged as one of the top five orchestral works of the 1980-81 season. That performance in Washington, D.C., by the Curtis Symphony, Robert Fitzpatrick conducting, was broadcast on National Public Radio, the Voice of America and International Concert Hall. It was repeated in the St. Louis Symphony concert series, with Slatkin conducting, on public radio last April.

Wykes joined the WU faculty in 1955. Five of his works have been premiered by the St. Louis Symphony.



Robert Wykes

## Nault to direct field study programs

Richard L. Nault, WU assistant professor of education, has been appointed coordinator of educational alternatives for 1981-82, a new part-time educational administrative position within the College of Arts and Sciences, Dean Linda B. Salamon has announced.

Nault will administer and assess the field study and supervised performance programs, both of which provide undergraduate students with opportunities to learn outside the classroom. A specialist in educational administration, Nault will continue to work part-time at the University's Graduate Institute of Education, where he teaches in the secondary education program. He also serves on the Board of College Advisors.

Currently, some 50 to 75 students are enrolled in the supervised performance program, according to Nault. They spend about five hours a week for two semesters working on

special projects both on and off campus under the direction of supervisors. If their performance is judged satisfactory, they earn three credits for this varied experience.

The field study program provides an opportunity for more intensive alternatives to classroom learning. With the appropriate approval and supervision, students may spend an entire semester in such field work, which provides 12 units of academic credit. Previously, such students have worked on political campaigns and focused on research. Nault hopes to expand the scope of this program and to encourage greater student participation.

Nault, who joined the WU faculty in 1974, received the faculty teaching award from the Council of Students of Arts and Sciences in 1979 and last year received a faculty teaching award from the WU Alumni Association at Founders Day.



Soccer Bear Owen Curtis and an opponent fight for ball possession.

## Soccer Bears face 19-game schedule

A 19-game schedule that includes four traditional rivals from the midwest and NAIA National Champion, Quincy College, faces the Battling Soccer Bears of WU this fall.

The Bears are now three and one, having beaten Indiana State University-Terre Haute 2-1; Greenville College 3-2; and Indiana State University-Evansville 1-0. The Bears lost their season opener 2-1 to University of Missouri-Rolla.

The traditional rivalries will resume against Maryville College on Sept. 23; Blackburn College on Sept. 27; MacMurray College on Oct. 4; and the University of Missouri-St. Louis on Oct. 21.

Quincy College will be the regular season's wrap-up opponent on the NAIA champions' field on Sunday, Nov. 1.

Coach Joe Carenza, Jr., has nine lettermen returning from the 1980 WU team, which finished fourth in the NCAA Division III Championship last year. That was the third straight year the Battling Bears finished among the top teams in their division. In 1978 they were second, and in 1979 they took third place.

Carenza's lettermen include captain Kevin Boyarsky, a 21-year-old senior from Manchester, N.H., who will be earning his fourth monogram in Hilltop soccer.

Boyarsky is a link, as are returnees Jeff Levoff, Phil Beljanski, Glen Edwards, and Monti Stegen. Other lettermen are goalie Gary Lubin, back Steve Bigg, and forwards Owen Curtis and Steve Lewis.

## Faculty Notes

Rodey Batiza, assistant professor of earth and planetary sciences, has been invited to serve on the Origin and Evolution of Oceanic Crust Panel of the Conference on Scientific Ocean Drilling. The international panel includes representatives from the United States, Canada, France and the Soviet Union. They are investigating how to best use deep sea drilling ships like the Glomar Challenger for scientific studies of the ocean floor.

Will Dean Gillett and Seymour V. Pollack, assistant professor and professor of computer science, are coauthors of a new textbook, *An Introduction to Engineered Software*. The book, designed for an undergraduate course, will be published in late September by Holt, Rinehart and Winston.

Derek M. Hirst, WU associate professor of history and a recent recipient of a Guggenheim Fellowship, flew to Great Britain in August to begin a year's research on a book concerned with the military government in England during the Cromwellian period, 1660-1685.

Four members of the Department of Systems Science and Mathematics — professors John Zaborszky, Tzyh-Jong Tarn and David Elliott, and associate professor Hiroaki Mukai — presented papers at the Tri-Annual Congress of the International Federation for Automatic Control. The congress, an organization representing 35 nations, was held August 24-28 in Kyoto, Japan. Zaborszky chairman of the department, is president of the U.S. chapter of the congress. He is continuing to Peking, China, where he has been invited to lecture at the Chinese Academy of Sciences. His talk is entitled, "The Past, Present and Future of Systems Science."

Items about faculty activities for the Faculty Notes column may be sent to Box 1142. Please type material submitted and include name and phone number.



# Calendar

SEPTEMBER 17-26

## Lectures

### Thursday, September 17

7 p.m. George Warren Brown School of Social Work Lecture, "Social Work Practice Today: Challenge and Opportunity," Mary Ann Quaranta, president, National Association of Social Workers. Cosponsored by the School of Social Work Alumni Assoc., and Mo. Chapter of N.A.S.W. Steinberg Aud.

8 p.m. Department of English Colloquium, "Story, Thought and Theory: Reflexions on Plot," Howard Nemerov, WU Edward Mallinckrodt Distinguished University Professor, dept. of English. Hurst Lounge, Duncker.

### Friday, September 18

Noon, Cardiovascular Visiting Professor Program Lecture, "Recent Advances in Physiologic Pacing," Lars Ryden, prof. of medicine, U. of Gothenburg. W. Pavilion Amph., Barnes Hosp. Plaza. Sponsored by Medtronic Inc.

### Monday, September 21

8:30 p.m. School of Architecture Lecture, "Design Philosophy and Current Work of 3D International," Gary Boyd, vice president and director of marketing, 3D International, Houston, Tex. Steinberg Aud.

### Tuesday, September 22

10 a.m. Woman's Club Welcoming Coffee. Open to all women faculty and staff members and wives of faculty and staff. University House, 6420 Forsyth Blvd.

11 a.m. Departments of Technology and Human Affairs and Civil Engineering Seminar, "Environmental Impact of Storm Water Management Impoundments," Aelrd Geis, urban wildlife specialist, U.S. Fish and Wildlife Service. 101 Lopata.

### Wednesday, September 23

11 a.m. Assembly Series Lecture with Justin Kaplan, National Book Award winner, on the writings of Mark Twain and Walt Whitman. Graham Chapel.

8:30 p.m. Hillel Foundation Egyptian-Israeli Dialogue, commemorating the third anniversary of the Camp David peace talks. Gideon Samet, Washington correspondent of *Ha'aretz*, one of Israel's leading daily newspapers, and Ahmed Abushadi, Washington correspondent for *Akkbar El Yom*, Cairo's leading daily. Hillel House, 6300 Forsyth Blvd. General admission \$2; \$1 for students.

### Thursday, September 24

2:15 p.m. Departments of Mechanical Engineering and Chemical Engineering Colloquium, "Creative Problem Solving in Engineering" Nathaniel C. Wyeth, senior engineering fellow, E. I. du Pont

## Short courses offered in humanities

The Arts, Humanities and Sciences series, a program of short, non-credit courses and special programs taught by WU faculty members, includes a variety of courses ranging from the "Musical Life in Vienna, 1750-1850" to "English Words: Origins and Histories."

Scheduled during the morning, afternoon and evening hours, most of the courses begin the third week of September.

Other courses offered are "The Making of Foreign Policy: International Perspectives Since World War II"; "Moby Dick"; "Mushrooms and Molds: Natural History and Folklore, Uses and Abuses"; and workshops on poetry and fiction writing.

For a brochure listing fall and spring courses, contact Jean Pennington, 100 January Hall, or call Ext. 6759.



Mr. Jack Daniel's original Silver Cornet band will perform its whimsical recreation of the small town band phenomenon of the 1890s at 7 p.m. Sunday, Sept. 20 in Edison Theatre.

Nemours, Inc., 100 Cupples II.

3 p.m. George Warren Brown School of Social Work Colloquium, "Coping Models, Transfer of Experience and Television," David Katz, WU assoc. prof. of social work and dir., School of Social Work video center. Brown Hall Lounge.

4 p.m. Sixth Annual Mildred Trotter Lecture, "Recent Findings on the Biochemical and Functional Organization of the Glomerular Basement Membrane," Marilyn Gist Farquhar, professor of cell biology and pathology, Yale U. School of Medicine. Carl V. Moore Aud., 4580 Scott Ave.

4 p.m. Department of Chemistry Seminar, "Models for Photosynthetic Electron Transfer," John Connelly, Solar Energy Research Inst., Golden, Colo. 311 McMillan Lab. (Coffee hour at 3:30 p.m., 561 Louderman.)

7:30 p.m. Department of Philosophy Colloquium, "The Growth of Children's Rights," Carl P. Wellman, WU prof. of philosophy. Hurst Lounge, Duncker.

## Performing Arts

### Friday, September 18

8 p.m. Edison Theatre Presentation, the Bella Lewitzky Dance Company, a ten-member modern dance troupe from Los Angeles. Edison Theatre. Tickets are: \$6 general admission; \$4.50 for area students, WU faculty and staff; \$3 for WU students. Tickets available at Edison Theatre box office. (Also 8 p.m., Sat., Sept. 19, Edison Theatre.)

## Calendar Deadline

The deadline to submit items for the calendar period of Oct. 8-17 is Sept. 24. Items must be typed and state time, date, place, nature of event, sponsor and admission cost. Incomplete items will not be printed. If available, include speaker name and identification and title of the event. Those submitting items, please note name and telephone number. Address items to Susan Kesling, calendar editor, Box 1142.

## Music

### Sunday, September 20

7 p.m. Edison Theatre Presentation, Mr. Jack Daniel's Original Silver Cornet Band, presenting a whimsical recreation of a turn-of-the-century band concert in small town America. Edison Theatre. Tickets are \$8.50 general admission; \$6 for students; \$4.50 for children under 12. Tickets available at Edison Theatre box office.

7:30 p.m. Team 31 Concert, with Spyro Gyra. Graham Chapel. Tickets are: \$7.50 for WU students, faculty and staff; \$8.50 general admission, available at Edison Theatre box office, Streetside Records locations, Backstage Records and Tapes, and Dialtix 569-0500.

### Saturday, September 26

8 p.m. Performing Arts Area Presentation, "The Masters Wrote Jazz," a concert of works by Stravinsky, Copland, Debussy and others. Steven Radecke, WU artist-in-residence, and composer-conductor, Leo Smit, with the WU Wind Ensemble, directed by Dan Presgrave, WU instructor of music. Edison Theatre. Tickets \$3, available at Edison Theatre box office.

## Films

### Thursday, September 17

7:30 and 9 p.m. WU Filmboard Series, "Woyzeck." Brown Hall Aud. \$2.

### Friday, September 18

8 and 10 p.m. WU Filmboard Series, "My Bodyguard." Brown Hall Aud. \$2. (Also Sat., Sept. 19, same times, Brown.)

Midnight. WU Filmboard Series, "Night of the Living Dead." Brown Hall Aud. \$1. (Also Sat., Sept. 19, same time, Brown.)

### Monday, September 21

7:30 and 8:45 p.m. WU Filmboard Series, "The Cabinet of Dr. Caligari." Brown Hall Aud. \$2.

### Tuesday, September 22

7:30 and 9:15 p.m. WU Filmboard Series, "Silent Movie." Brown Hall Aud. \$2.

### Wednesday, September 23

7:30 and 9:30 p.m. WU Filmboard Series, "My Brilliant Career." Brown Hall Aud. \$2. (Also Thurs., Sept. 24, same times, Brown.)

### Friday, September 25

7 and 9:30 p.m. WU Filmboard Series, "Fame." Brown Hall Aud. \$2. (Also Sat., Sept. 26, same times, Brown.)

Midnight. WU Filmboard Series, "Richard Pryor in Concert." Brown Hall Aud. \$1. (Also Sat., Sept. 26, same time, Brown.)

## Sports

### Thursday, September 17

3:45 Women's Tennis. WU vs. Belleville Area College. WU Tennis Courts.

### Friday, September 18

7 p.m. Soccer. WU vs. Aurora College. Francis Field.

### Saturday, September 19

10 a.m. Women's Tennis. WU vs. Indiana State U.-Evansville. WU Tennis Courts.

1 p.m. Women's Volleyball. WU vs. Stephens College. Women's Building Gym.

1:30 p.m. Football. WU vs. Centre College. Francis Field. General admission \$3; WU students, free.

### Monday, September 21

4 p.m. Women's Tennis. WU vs. Lindenwood College. WU Tennis Courts.

### Wednesday, September 23

3:45 p.m. Women's Tennis. WU vs. St. Louis U. WU Tennis Courts.

7 p.m. Soccer. WU vs. Maryville College. Francis Field.

### Saturday, September 26

1 p.m. Soccer. WU vs. Depauw U. Francis Field.

Entered